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5. (Amended) A therapeutic spa tub having a waterline and one or more therapeutic water nozzles for issuing jets of water into said tub, said water nozzles each comprising a housing having an inlet for receiving a flow of water under pressure, a fluidic oscillator having an oscillation chamber and a power nozzle coupled to said inlet and said oscillation chamber for projecting a first jet of water into said oscillation chamber and a pair of outlets from said oscillation chamber for issuing a pulsating jet of water into said spa tub below said waterline, said fluidic oscillator is a reversing chamber oscillator and wherein said oscillation chamber has a reversing wall, said power nozzle being centrally located for issuing said first jet of said water toward said reversing wall, and said pair of outlets being constituted by a pair of liquid passages leading from said reversing chamber on each side of said power nozzle, respectively, for alternately carrying periodic pulses of said water and wherein said liquid passages are smoothly extended to intersect at said common outlet to ambient and water from said passages merge to form a low-frequency swept water jet below said waterline.

R E M A R K S

Claims 1, 2, 3 and 5 have been amended.

The claims have been amended to avoid the 35 U.S.C. §112, first and second paragraph objections as set out in paragraphs 3-6

of the Office Action. While applicants have amended the claims to avoid the Examiner's objections, it should be noted that in Figure 1 there are two outlets into the spa tub, and each of the reversing chamber oscillators has a pair of outlets labelled CH1 and CH2.

The rejection of Claims 1-6 under 35 U.S.C. §103(a) as being unpatentable over Bauer (US 4,662,568) in view of Fichter (US 3,776,460) and Blakely et al (US 3,337,135) is respectfully traversed.

Reconsideration is respectfully requested. Applicants respectfully submit that Bauer is not a teaching reference. This Bauer patent is directed to a spray nozzle in which a series of stressing members are formed in the nozzle so as to further break up the liquid into smaller droplets, leaving the nozzle. In this regard, Fichter seeks to achieve a conical spray and Bauer seeks to break the liquid droplets up into "smaller drops after leaving the nozzle"; neither speaks to underwater operations.

Applicants respectfully submit that these references have nothing at all to do with issuing one or more pulsating jets of water into a spa tub below the waterline and air passage in the outlet for selectively entraining ambient air in the water passing through the outlet.

Blakely et al relates to a spiral fuel flow restrictor and, likewise, has nothing whatever to do with issuing pulsating jets of water into a spa tube below the waterline. None of these references teaches or suggests submerged operation, and neither

reference teaches or suggests submerged operation in which an air passage is provided for selectively entraining ambient air and water passing through the outlet. In Bauer (US 4,662,568), the recesses 42 may extend through the wall 32 to the ambient environment surrounding the nozzle as shown in Figure 3B or may be blind recesses such as recesses which extend only part-way through the wall 32. The idea here is that these recesses have as their primary purpose to stress the flow in chamber 24 such that the flow subdivides before it exits from the nozzle. He does not talk about air being introduced at all -- note that the recesses may be blind recesses that do not extend to the exterior of the device. Applicants respectfully submit that the submerged operation described in the present application is not taught or suggested by this Bauer reference even combined with Blakely et al and Fichter. The combination of these references neither teaches nor suggests underwater operation in which a fluidic oscillator sweeps a jet of water under water. These references teach or suggest in combination with Bauer the break-up of the jet into fine droplets.

Hence, applicants respectfully submit that the references do not teach or suggest the invention defined by Claims 1-6 and their allowance is believed to be in order.

The rejection of Claim 5 under 35 U.S.C. §103 as being unpatentable over Bauer (US 4,184,636) in view of Fichter (US 3,776,460 and Blakely et al (US 3,337,135) is respectfully traversed. Bauer '636, like the earlier discussed Bauer patent is

directed to a spray-forming fluidic oscillator in which the spray is formed in air or ambient air and does not teach or suggest an underwater or submerged operation. Bauer '636 does not teach or suggest a pair of liquid passages leading from the reversing chamber on each side of the power nozzle for alternately carrying periodic pulses of water and wherein the outlet passages are smoothly extended to intersect at a common outlet to ambient.

Claim 6 depends from Claim 5 and specifies that the nozzle has a threaded rear housing and feed ring having a wall defining a water chamber surrounding the reversing chamber and an air chamber for coupling air to the outlet for entrainment in the swept water jet. No such teaching or suggestion is found in these references.

In view of the above, further and favorable reconsideration is respectfully requested.

Respectfully submitted,



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Attachment:

Version With Markings to Show Changes Made

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In the event this paper is deemed not timely filed, the applicant hereby petitions for an appropriate extension of time. The fee for this extension may be charged to Deposit Account No. 26-0090 along with any other additional fees which may be required with respect to this paper.



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IN THE CLAIMS:

Claims 1, 2, 3 and 5 have been amended as follows:

1. (Amended) A therapeutic spa tub having a waterline and one or more therapeutic water nozzles for issuing jets of water into said tub, said one or more water nozzles each comprising a housing having an inlet for receiving a flow of water under pressure, a fluidic oscillator having an oscillation chamber and [at least one] a power nozzle coupled to said inlet and said oscillation chamber for projecting [at least one] a first jet of water into said oscillation chamber, a pair of outlet passages [in one or more outlets] from said oscillation chamber for issuing [one or more pulsating jets] a pair of periodically pulsating pulses of water into said spa tub below said waterline, and an air passage in said outlet for selectively entraining ambient air in water passing through said common outlet.

2. (Amended) The therapeutic spa tub defined in Claim 1 wherein said fluidic oscillator is a reversing chamber oscillator and wherein said oscillation chamber has a reversing wall, said power nozzle being centrally located for issuing [a] said first jet of said water toward said reversing wall, a common outlet located below said waterline and a pair of liquid outlet passages leading from said reversing chamber on each side of said power nozzle, respectively, to said common outlet for [alternately] carrying

[periodic] said periodically pulsating pulses of said water and
10 wherein said outlet passages are smoothly extended to intersect at
[a] said common outlet to ambient and water from said liquid outlet
passages merge to form a low-frequency swept jet, and said passages
are [dimensioned and] angulated relative to each other to [control]
establish the sweep angle of a second liquid jet [in] which is
15 periodically swept [into] in said common outlet to ambient water in
said spa tub.

3. (Amended) The therapeutic spa tub defined in Claim 2
wherein said pair of [fluidic] outlet passages have an upstream end
at said reversing chamber and downstream end at said common outlet,
each said passage having an outer wall which, with said reversing
5 wall, define an oval.

5. (Amended) A therapeutic spa tub having a waterline and
one or more therapeutic water nozzles for issuing jets of water
into said tub, said [one or more] water nozzles each comprising a
housing having an inlet for receiving a flow of water under
5 pressure, a fluidic oscillator having an oscillation chamber and
[at least one] a power nozzle coupled to said inlet and said
oscillation chamber for projecting [at least one] a first jet of
water into said oscillation chamber [in one or more] and a pair of
outlets from said oscillation chamber for issuing [one or more] a
10 pulsating [jets] jet of water into said spa tub below said

waterline, said fluidic oscillator is a reversing chamber oscillator and wherein said oscillation chamber has a reversing wall, said power nozzle being centrally located for issuing [a] said first jet of said water toward said reversing wall, and said
15 pair of outlets being constituted by a pair of liquid passages leading from said reversing chamber on each side of said power nozzle, respectively, for alternately carrying periodic pulses of said water and wherein said [outlet] liquid passages are smoothly extended to intersect at said common outlet to ambient and water
20 from said passages merge to form a low-frequency swept water jet below said waterline.